

**The Effects Upon Adolescence Behavioral Outburst As A  
Function of the Administration of Audio Tapes Containing  
Subaudible Sound Frequencies (Binaural Beats Technique)**

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ABSTRACT

Children who were clinically diagnosed as "Seriously Emotionally Disturbed" were administered successive regular trials of auditory relaxation tapes with a subaudible combination of sound frequencies. The research tapes were recorded using the binaural evocation technique of Hemispheric Synchronization (Hemi-Sync) by way of stereo headset. The children listened to the tape three times a week and incident reports regarding behavioral outbursts were recorded eight weeks prior to and 8 weeks during the time the tapes were being administered. Results suggested that there were significantly fewer incident reports during the time the tapes were being administered.

The Effects Upon Adolescence Behavioral Outburst As A Function Of The Administration Of Audio Tapes Containing Subaudible Sound Frequencies (Binaural Beats Technique)

Hemispheric Synchronization (Hemi-Sync) is an auditory guidance system which is said to employ the use of sound pulses to induce a frequency following response in the human brain. It is reported that the Hemi-Sync process can heighten selected awareness and performance while creating a relaxed state. Hemi-Sync involves the physics of resonant entrainment, brainwaves and their relationship to the behavioral psychology of consciousness and the physiology of the brain (Atwater, 1977).

The addition of Hemi-Sync signals to background music increases a child's focus of attention and creates a mental set of open receptivity. Positive feedback and suggestions about ease and success of learning were provided while the child was in a focused state and was more accepting of new responsibility. This was studied while using Hemi-Sync in the therapy-learning environment of the young physically handicapped child (Morris, 1983).

Ronald Brill and Rex Walker (1985) used Hemi-Sync relaxation tapes to decelerate maladaptive behavior. The results of this case were most encouraging with respect to the potential for counseling and relaxation procedures in the treatment of persons who are mentally retarded. The use of "Hemi-Sync" tapes in conjunction with counseling brought about an immediate and long-term amelioration of self-injurious behavior.

Deborah Ann Baker, PhD (1986) compared the effects of rest and Hemispheric Synchronization to the effects of rest and guided imagery on the enhancement of creativity in problem solving. She found that combining the float experience with Hemi-Sync and guided imagery reduced anxiety levels in the interview situation and reduced stress to great extents.

There will be no difference between the frequency of adolescence behavioral outburst as a function of a binaural tape.

#### METHOD

SUBJECTS: Eight white female adolescents, age range from 11 to 17. Each have been classified as "Seriously Emotionally Disturbed" and are currently residing at a residential treatment facility for adolescents in Oklahoma.

APPARATUS: Stereo cassette players with stereo headphones were utilized in the administration of the research. This

tape was a product of the Monroe Institute entitled Discovery 2 Focus 10. The research tape consists of 45 minutes of a relaxation verbal message with subaudible signals that evoke specific brain electrical energy patterns.

PROCEDURE: The eight subjects chosen for the research were told to read "The Gateway Affirmation" before listening to a Hemi-Sync tape. The Gateway Affirmation reads:

"I am more than my physical body. Because I am more than physical matter, I can perceive that which is greater than the physical world. Therefore, I deeply desire to Expand; to Experience; to Know; to Understand; to Control; to use greater energies and energy systems as may be beneficial and constructive to me and to those who follow me. Also, I deeply desire the help and cooperation, the assistance, the understanding of those individuals whose wisdom, development and experience are equal or greater than my own. I ask their guidance and protection from any influence or any source that might provide me with less than my stated desires." (Monroe Institute).

After reading the affirmation, each subject listened to the tape "Discovery 2, Focus 10". This tape consists of three components. First, the Hemi-Sync tones are played. Second, a form of white noise (called Phased Pink), modulated with a sound like an ocean surf was played to mask the tones. Finally, a guided relaxation exercise was spoken on the tape. The length of

the tape is 45 minutes. Each subject listened to the Focus 10 tape three times a week for eight weeks.

Eight weeks before the procedure began, behavioral incident reports were tallied. The behavioral incident reports utilized are documentation of negative behaviors and resolutions to correcting those behaviors. At the end of the eight week period in which the tapes were utilized, a statistical T-test for indepth measure was administered. A T-Test is a parametric test for measuring the difference between two means. The results of this test suggest significantly fewer incident reports during the time the tapes were being administered.

## RESULTS

### T-TEST

#### BEFORE:

Mean	= 9.2500
Variance	= 4.2143
Standard deviation	= 2.0529
Standard error of the mean	= 0.7759

#### AFTER:

Mean	= 5.0000
Variance	= 6.2857
Standard deviation	= 2.5071
Standard error of the mean	= 0.9476

### T-TEST STATISTICS

Difference (Mean X - Mean Y)	= 4.2500
Standard error of the difference	= 1.4608
T-Statistic	= 2.9094
Degrees of freedom	= 7
Probability of t (one tailed test)	= 0.0110
Probability of t (two tailed test)	= 0.0221

Correlation coefficient	= .6384
Valid cases	= 8
Missing cases	= 0
Response percent	= 100%

### DISCUSSION

The results of this study have been most encouraging with respect to the administration of audio tapes on behavioral outburst with adolescence. Hemi-Sync being a fairly new process made it difficult to complete a detailed literature review since only a few studies have been made.

No research on Hemi-Sync and behavioral outburst in adolescence were found; however, due to the significant difference in behavioral reports in this study, it appears Hemi-Sync tapes should be utilized to control behavioral outbursts more than ever in residential settings, classroom, and even in the home. In the future, I would like to see Hemi-Sync utilized in all treatment type facilities including adolescent residential to adult correction, and follow-up research administered.

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